

GETTING ACQUAINTED

Congratulations upon your selection of this CASIO watch. To get the most out of your purchase, be sure to carefully read this manual and keep it on hand for later reference when necessary.

Precautions

- This watch is intended for use up to skin diving and snorkeling. It is not designed for use during scuba diving.
- Never operate the buttons of the watch while underwater or while floating on the water's surface.

Before Skin Diving/Snorkeling

- Before beginning skin diving or snorkeling, check to make sure that neither of the following is on the display.
 - ERROR message (indicating sensor malfunction)
 - BATT message (indicating low battery power)
- Make sure that the watch is set to the correct time of day.
- Check the glass, case and band for cracks or chips.
- Make sure that the band is fastened securely around your wrist.

While Skin Diving/Snorkeling

- The indicator ERROR on the display may indicate bad data.
- To avoid scratching the watch, take care when skin diving/snorkeling near rocks or coral.

After Skin Diving/Snorkeling

- To avoid corrosion, rinse your watch thoroughly with fresh water to remove salt water, dirt, etc. (When possible, soak the watch in fresh water overnight to make sure that all salt is removed.)
- When using a metal band, occasionally clean inside the gaps in the band using a soft toothbrush and soapy water. Failure to do so can result in corrosion of the watch, soiling of clothing, or irritation to sensitive skin.

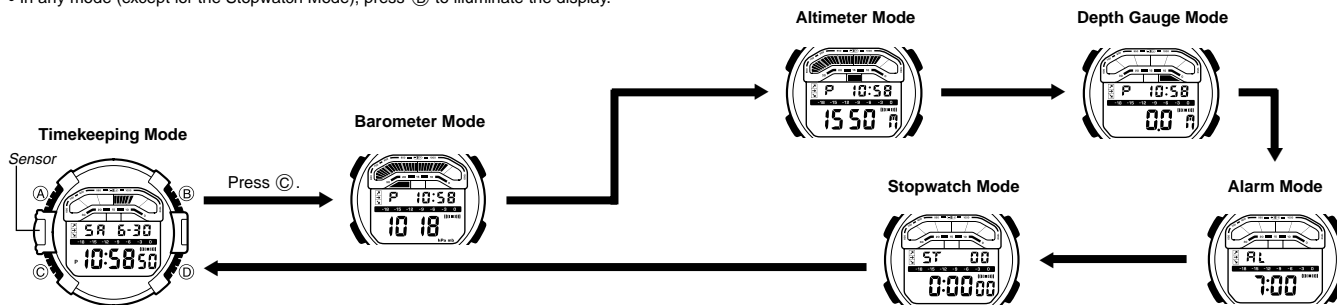
About This Manual



- Button operations are indicated using the letters shown in the illustration.
- Each section of this manual provides you with the information you need to perform operations in each mode. Further details and technical information can be found in the "REFERENCE" section.

GENERAL GUIDE

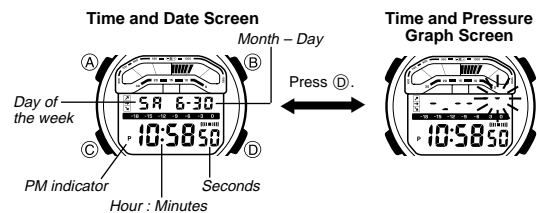
- Press (C) to change from mode to mode.
- In any mode (except for the Stopwatch Mode), press (B) to illuminate the display.



TIMEKEEPING

Use the Timekeeping Mode to set and view the current time and date.

- You can display either of two screen formats in the Timekeeping Mode: a *Time and Date* screen or a *Time and Pressure Graph* screen. Press (D) in the Timekeeping Mode to toggle between the two screens.



To reset the seconds count to zero

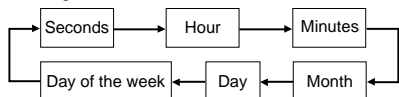
1. While the Time and Date screen is on the display in the Timekeeping Mode, hold down (A) until the second's digits start to flash, which indicates the setting screen.
2. Press (D) to reset the seconds count to 00.
 - Pressing (D) while the seconds count is in the range of 30 to 59 resets the seconds to 00 and adds 1 to the minutes. In the range of 00 to 29, the minutes count is unchanged.
3. Press (A) to exit the setting screen.

To set the time and date

1. While the Time and Date screen is on the display in the Timekeeping Mode, hold down (A) until the second's digits start to flash, which indicates the setting screen.



2. Press (C) to move the flashing around the display in the sequence shown below to select other settings.



3. While a setting is flashing, press (D) (+) to change it.
 - While any setting is flashing on the display, press (B) to toggle between 12-hour timekeeping and 24-hour timekeeping.
4. Press (A) to exit the setting screen.

Note

The watch does not make any allowance for leap years. Be sure to make the necessary changes to the date setting to allow for February 29 during a leap year.

BAROMETER

This watch uses a pressure sensor to measure air pressure (barometric pressure). There are two types of measurements: *regular barometric pressure readings* and *Barometer Mode barometric pressure readings*, which are described below.

- You can calibrate the pressure sensor if you suspect the barometric pressure reading is incorrect.

Important!

The pressure sensor built into this watch measures changes in air pressure, which you can then apply to your own weather predictions. It is not intended for use as a precision instrument in official weather prediction or reporting applications.

Regular Barometric Pressure Readings

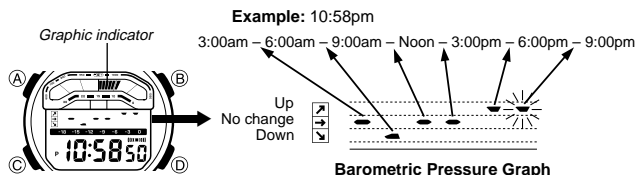
The watch takes regular barometric pressure readings every three hours starting from midnight each day. The data produced by these readings is used for the graphic display and barometric pressure graph in the Timekeeping Mode.

- Measurements are taken nine, six, and three seconds before each of the regular measurement times.
- The watch calculates the average of the three readings, and displays the result.
- Regular barometric pressure readings are different from the readings taken in the Barometer Mode. Regular barometric pressure readings are used as the data for the barometric pressure graph and graphic indicator on the Time and Pressure Graph Screen in the Timekeeping Mode.

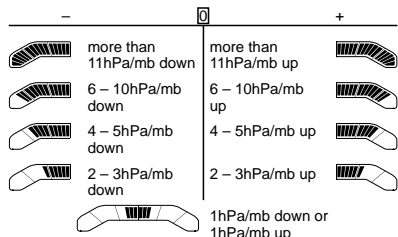
To display regular barometric pressure reading graphics

In the Timekeeping Mode, press (D) to display the Time and Pressure Graph Screen for the regular barometric pressure readings.

- The barometric pressure graph shows the relative changes between readings for the past 18 hours. The flashing marker on the right indicates the latest reading.



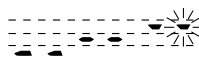
- Each mark on the graphic indicator indicates the relative change between the latest barometric reading and the one before it.



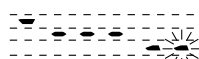
- The examples on the left indicate that the latest reading is less than the previous one, while those on the right indicate the latest reading is greater.

Barometric Pressure Graph

Barometric pressure indicates changes in the atmosphere. By monitoring these changes you can predict the weather with reasonable accuracy. The following shows how to interpret the data that appears on the barometric pressure graph.



A rising graph generally means improving weather.

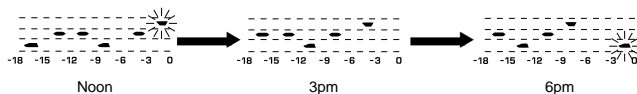


A falling graph generally means deteriorating weather.

Note that if there are sudden changes in weather or temperature, the graph line of past measurements may run off the top or bottom of the display. The entire graph will become visible once barometric conditions stabilize.

If any of the conditions listed below is present during one of the regular 3-hour measurements, a blank is inserted into the graph in place of a mark. The next time a successful reading is obtained (during a regularly scheduled 3-hour measurement), the current reading is compared with the last successful reading and the corresponding mark is added to the graph.

- Sensor data error (**ERROR** flashing on the display)
- Low battery power (**BATT** flashing on the display)
- Reading outside of measurement range (**FULL** on the display)



Barometer Mode Screen

A measurement cycle starts after you enter the Barometer Mode, with readings being taken every three seconds for the first four or five minutes. After that, readings are taken every minute.

Measurements you take in the Barometer Mode do not affect the barometric pressure information that appears on the Timekeeping Mode Screens. This means you can use the Timekeeping Mode Screen to see trends over a longer span, and the Barometer Mode to find out barometric pressure changes over a shorter term.

To start a barometric pressure measurement cycle

- Press **(C)** to enter the Barometer Mode. After a few seconds, the result of the current barometric pressure reading appears on the display.
 - Barometric pressure is displayed in units of 1hPa/mb (or 0.05inHg).
 - The mode indicator flashes while a measurement operation is in progress.
 - While a barometric pressure measurement operation is in progress in the Barometer Mode, press **(D)** to stop the current operation and restart a new measurement cycle.
-

- Some countries express barometric pressure in units of millibars (mb) instead of hecto-pascal (hPa). It really makes no difference, because 1hPa = 1mb. In this manual, we use hPa/mb or hPa (mb).
- You can change the measured barometric pressure unit between hecto-pascals/millibars (hPa/mb) and inchesHg (inHg). See "To specify the barometric pressure unit" for details.
- The message **FULL** appears on the display whenever the barometric pressure reading is outside the measurable range of 600hPa/mb to 1100hPa/mb (17.70inHg to 32.45inHg). The barometric pressure value reappears when the barometric pressure reading returns to the measurable range.

Barometer Mode Graphic Indicator

Graphic indicator (Indicates 1018hPa/mb)



In the Barometer Mode, the graphic indicator shows the current barometric pressure. Segments are darkened in the graphic indicator from the left (lower pressure) to the right (higher pressure).

- In the range of 600 to 950hPa/mb each rise of 35hPa/mb causes one more segment to be darkened. In the range of 951 to 1045hPa/mb, each rise of 5hPa/mb causes one more segment to be darkened. All segments are darkened when the barometric pressure is 1046hPa/mb or greater.
- When the barometric pressure unit is set to inHg, the watch actually measures in hPa/mb units and then converts to inHg. Because of this, the graphic indicator will show the hPa/mb value before switching to the corresponding inHg value.

ALTIMETER

A built-in altimeter uses a pressure sensor to detect the current air pressure, which is then used to estimate the current altitude. The watch is pre-programmed with ISA (International Standard Atmosphere) preset values, which are used to convert air pressure readings to altitude values. If you preset a reference altitude, the watch will also calculate the current relative altitude based on your preset value.

Important!

- This watch estimates altitude based on air pressure. This means that altitude readings for the same location may vary if air pressure changes.
- Do not rely upon this watch for altitude measurements or perform button operations while engaging in sports where there are sudden altitude changes, while sky diving, hang gliding, or paragliding, or while riding a gyrocopter, glider, or any other aircraft.
- Note that the following conditions will prevent you from obtaining accurate readings:
 - When air pressure changes because of changes in the weather
 - Extreme temperature changes
 - When the watch itself is subjected to strong impact
- In order to avoid measurement problems caused by differences in the watch's temperature, be sure to wear the watch so that it comes into direct contact with your skin.
- Do not use this watch for measuring altitude in applications that demand professional or industrial level precision.

How the Altimeter Works

The watch measures *relative altitudes* in relation to a *reference altitude* set by you. You can set a reference altitude using zero reset, or by specifying an altitude value from a map, sign post, etc.

- After you set the reference altitude, the watch adjusts its air pressure to altitude conversion calculation accordingly.

Setting a Reference Altitude Value

With this method, you can specify a current altitude value you obtain from a map or signpost. Then the watch measures altitude relative to the value you set.

- When mountain climbing, you can set the reference value in accordance with a marker along the way or altitude information from a map.
- The altitude measurements produced by this watch are subject to error caused by changes in air pressure. Because of this, we recommend that you update the reference altitude whenever one is available during your climb.

To set a reference altitude value

- Press **(C)** to enter the Altimeter Mode, and wait for a few seconds until the current altitude value appears on the display.
- Hold down **(A)** until the current altitude value starts to flash. This indicates the reference altitude setting screen.
- Use **(D)** (+) and **(B)** (-) to change the displayed value in 5-meter (20-foot) increments.
 - You can set a reference altitude value in the range of 0 to 4000 meters (0 to 13120 feet).
- Press **(A)** to exit the setting screen.
 - After you press **(A)**, the numbers on the display indicate that the watch is making internal adjustments. This operation takes about nine seconds. Once adjustments are finished, the altitude display appears.

Reference Altitude Zero Reset

With zero reset, you can set the reference altitude to zero. The watch then measures altitude relative to zero.

- To determine the height of a tall building, set the reference altitude to 0 on the ground floor. Note, however, that you may not be able to get a good reading if the building is pressurized or air-conditioned.
- Before beginning a climb up a mountain, you could set the reference altitude to 0m at the foot of the mountain. This makes it possible to determine the difference in altitude between the reference point and your destination.

To zero reset the reference altitude

- Press **(C)** to enter the Altimeter Mode, and wait for a few seconds until the current altitude value appears on the display.
- Hold down **(A)** until the current altitude value starts to flash. This indicates the reference altitude setting screen.
- Press **(B)** and **(D)** at the same time to change the displayed value to zero.
- Press **(A)** to exit the setting screen.
 - After you press **(A)**, the numbers on the display indicate that the watch is making internal adjustments. This operation takes about nine seconds. Once adjustments are finished, the altitude display appears.

Using the Altimeter Mode

A measurement cycle starts after you enter the Altimeter Mode, with readings being taken every three seconds for the first four or five minutes. After that, readings are taken every minute.

- Altitude is displayed in 5-meter (20-foot) units.
 - The mode indicator flashes while a measurement operation is in progress.
 - While an altitude measurement operation is in progress in the Altimeter Mode, press **(D)** to stop the current operation and restart a new measurement cycle.
 - The measured altitude may be a negative value in cases where there is a reference altitude value set or because of certain atmospheric conditions.
 - You can change the unit of measurement for the displayed altitude values between meters (M) and feet (F). See "To specify the altitude unit".
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- The message **FULL** appears whenever the altitude reading is outside the display range of -4000 to +4000 meters (-13120 to +13120 feet). The altitude value reappears when the altitude reading returns to the measurable range.
- In the Altimeter Mode, the graphic indicator shows the current altitude. Segments are darkened in the graphic indicator from the left (lower altitude) to the right (higher altitude). In the range of 5 to 1000 meters (20 to 4000 feet), each increase of 45 meters (180 feet) causes one more segment to be darkened. In the range of 1005 to 2800 meters (4020 to 9400 feet), each increase of 195 meters (580 feet) causes one more segment to be darkened. All segments are darkened when the altitude is 2805 meters (9420 feet) or greater.

DEPTH GAUGE

The pressure sensor of the watch can also be used to take underwater depth measurements while skin diving or snorkeling. Depth is displayed up to 30 meters (99 feet).

Important!

- Never use this watch to measure depth while scuba diving.
- Leaving the watch in the Depth Gauge Mode while not in the water uses up battery power. Exit the Depth Gauge Mode whenever you are not using it.
- See "Depth Gauge Mode" for more information.

Depth Gauge Mode Screen

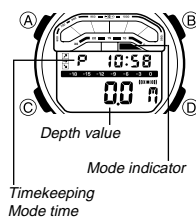
Depth measurement starts after you enter the Depth Gauge Mode, with a new reading taken every three seconds.

To perform a depth measurement

Just before starting your dive, press (C) to enter the Depth Gauge Mode.

- Depths are displayed in 0.1-meter (1-foot) units.
- The mode indicator flashes while a measurement operation is in progress.
- The depth reading is automatically reset to zero whenever you enter the Depth Gauge Mode.
- The depth reading shows 0.0 meters (0 feet) when the watch is submerged at a depth of 0 to 1 meter (0 to 3 feet).
- You can change the unit of measurement for the displayed depth values between meters (M) and feet (F). See "To specify the depth measurement unit".

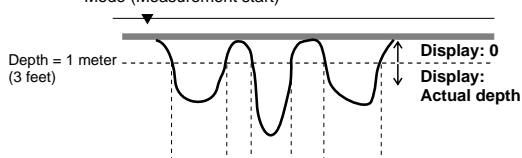
- When a depth of 30 meters (99 feet) is exceeded, the message **FULL** appears on the display. The depth value reappears when the depth reading returns to the measurable range.



Just before starting your dive, press (C) to enter the Depth Gauge Mode.

- Depths are displayed in 0.1-meter (1-foot) units.
- The mode indicator flashes while a measurement operation is in progress.
- The depth reading is automatically reset to zero whenever you enter the Depth Gauge Mode.
- The depth reading shows 0.0 meters (0 feet) when the watch is submerged at a depth of 0 to 1 meter (0 to 3 feet).
- You can change the unit of measurement for the displayed depth values between meters (M) and feet (F). See "To specify the depth measurement unit".

Enters the Depth Gauge Mode (Measurement start)



Note

You cannot exit the Depth Gauge Mode while any reading other than 0.0 meters (or feet) is on the display. See "Depth Gauge Measurement Precautions" for more information.

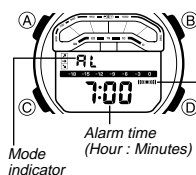
Depth Gauge Mode Graphic Indicator

Graphic indicator (Indicates 5m)



In the Depth Gauge Mode, the graphic indicator shows the current depth. The first bar appears on the right of the indicator when depth reaches 1 meter (3 feet). One more bar appears with each additional 1 meter (3 feet) of depth, up to 30 meters (99 feet).

ALARM



You can set a Daily Alarm that sounds at the same time each day, while the alarm is turned on. You can also turn on an Hourly Time Signal that causes the watch to beep twice every hour on the hour.

- All of the operations in this section are performed in the Alarm Mode, which you enter by pressing (C).

To set the alarm time

1. In the Alarm Mode, hold down (A) until the hour digits of the alarm time start to flash, which indicates the setting screen.
 - Displaying the alarm time setting screen turns on the Daily Alarm.
2. Press (C) to move the flashing between the hour and minute's digits, and then use (D) (+) to change the flashing digits.
 - When setting the alarm time using the 12-hour format, take care to set the time correctly as am (no indicator) or pm (P indicator).
3. Press (A) to exit the setting screen.

Daily Alarm Operation

The alarm sounds at the preset time each day for about 20 seconds (in all modes) or until you stop it by pressing any button.

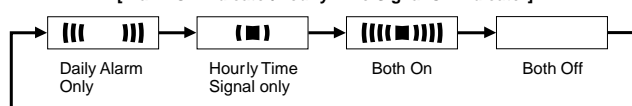
To test the alarm

In the Alarm Mode, hold down (D) to sound the alarm.

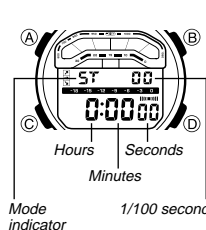
To turn the Daily Alarm and Hourly Time Signal on and off

In the Alarm Mode, press (D) to cycle through the on and off settings as shown below.

[Alarm On indicator/Hourly Time Signal On indicator]



STOPWATCH

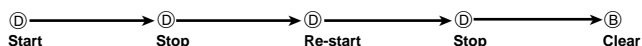


The stopwatch lets you measure elapsed time, split times, and two finishes.

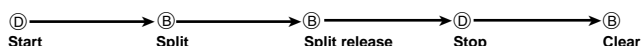
- The display range of the stopwatch is 23 hours, 59 minutes, 59.99 seconds.
- The stopwatch continues to run, restarting from zero after it reaches its limit, until you stop it.
- The stopwatch measurement operation continues even if you exit the Stopwatch Mode.
- All of the operations in this section are performed in the Stopwatch Mode, which you enter by pressing (C).

To measure times with the stopwatch

Elapsed Time



Split Time



Two Finishes



REFERENCE

This section contains more detailed and technical information about watch operation. It also contains important precautions and notes about the various features and functions of this watch.

Sensor Data Errors



Whenever a sensor problem, poor electrical contact, or other abnormality occurs during a barometric pressure, altitude, or depth measurement operation, the watch beeps for about three seconds and the **ERROR** indicator starts to flash on the display to indicate a sensor error. All measurement operations are disabled while the **ERROR** indicator is on the display.

If the **ERROR** indicator appears, press (C) to change to another mode, and then return to the mode where the error occurred. If the **ERROR** indicator appears again, it could mean that the watch is malfunctioning. Contact the store or dealer where you purchased the watch.

Low Battery Indicator



If the cause of the low battery indicator is due to cold conditions (about -10°C/14°F), normal operation should return after the watch is brought back to normal temperature.

If the cause of the low battery indicator is due to low battery power (indicated when **BATT** appears under normal temperatures), you should have the watch's batteries replaced as soon as possible.

Auto Return Features

- After you perform an operation in any mode, pressing (C) returns to the Timekeeping Mode.
- If you leave the watch for about one hour without performing any button operation in the Barometer Mode or Altimeter Mode, or in the Depth Gauge Mode with a current depth reading of 0, the watch beeps and returns to the Timekeeping Mode.
- If you leave a screen with flashing digits on the display for two or three minutes without performing any operation, the watch saves anything you have input up to that point and exits the setting screen.

Setting Scrolling

The (D) and (B) buttons are used in various setting screens to scroll through settings on the display. In most cases, holding down either of these buttons scrolls through settings at high speed.

12-hour/24-hour Timekeeping Formats

The 12-hour/24-hour timekeeping format you select in the Timekeeping Mode is also applied in all modes.

- With the 12-hour format, the **P** (PM) indicator appears to the left of the hour digits for times in the range of noon to 11:59 p.m. and no indicator appears to the left of the hour digits for times in the range of midnight to 11:59 a.m.
- With the 24-hour format, times are displayed in the range of 0:00 to 23:59, with **24H** indicator.

Altimeter Mode

How does the altimeter work?

Generally, air pressure and temperature decrease as altitude increases. Under its factory default setting, this watch bases its altitude measurements on International Standard Atmosphere (ISA) values stipulated by the International Civil Aviation Organization (ICAO). These values define relationships between altitude, air pressure, and temperature.

Altitude	Air Pressure	Temperature
4000 m	616 hPa/mb	About 8 hPa/mb per 100 m
3500 m	701 hPa/mb	About 9 hPa/mb per 100 m
3000 m	795 hPa/mb	About 10 hPa/mb per 100 m
2500 m	899 hPa/mb	About 11 hPa/mb per 100 m
2000 m	1013 hPa/mb	About 12 hPa/mb per 100 m
1500 m		
1000 m		
500 m		
0 m		

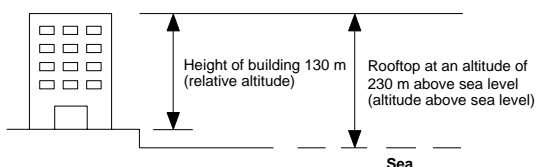
Source: International Civil Aviation Organization

Altitude	Air Pressure	Temperature
14000 ft	19.03 inHg	About 0.15 inHg per 200 ft
12000 ft	22.23 inHg	About 0.17 inHg per 200 ft
10000 ft	25.84 inHg	About 0.192 inHg per 200 ft
8000 ft	29.92 inHg	About 0.21 inHg per 200 ft
6000 ft		
4000 ft		
2000 ft		
0 ft		

Source: International Civil Aviation Organization

How is altitude expressed?

There are two standard methods of expressing altitude: *absolute altitude* and *relative altitude*. Absolute altitude expresses an absolute height above sea level. Relative altitude expresses the difference between the height of two different places.



Depth Gauge Mode

About depth and water pressure

Water pressure increases with depth. In the case of sea water (specific gravity=1.025), water pressure increases by 1 ATM (1.03 kg/cm²) with each 10 meters (33 feet) of depth.

This watch makes use of the relationship between pressure and depth, using a pressure sensor to calculate the water pressure and then converting this data into depth readings.

Depth Gauge Measurement Precautions

You cannot exit the Depth Gauge Mode or change the measurement unit setting while the depth reading on the display is any value other than zero. This is to prevent accidental switching from the Depth Gauge Mode while underwater.

Automatic Zero Depth Reset

The initial displayed depth reading is zero whenever you enter the Depth Gauge Mode, even if you are underwater. Because of this, you should enter the Depth Gauge Mode just before starting your dive. Do not enter the Depth Gauge Mode while underwater.

Manual Zero Depth Reset

In some cases, such as when the sensor is exposed to wide changes in temperature, the display may show a depth of greater than 1.0 meter (3 feet) even when you are on the surface. In this case, hold down (C) and (D) at the same time to reset the depth reading to zero.



Backlight Precautions

The backlight uses an EL (electro-luminescent) panel that causes the entire display to glow for easy reading in the dark. In any mode (except for the Stopwatch Mode), press (B) to illuminate the display for about one second.

- The backlight does not turn on if you press (B) while a setting screen is on the display.
- The electro-luminescent panel that provides illumination loses power after very long use.
- The watch may emit an audible sound whenever the display is illuminated. This is due to vibration of the EL panel used for illumination, and does not indicate malfunction.
- The illumination provided by the backlight may be hard to see when viewed under direct sunlight.
- The backlight turns off whenever an alarm sounds.
- The backlight remains lit for about one second from the point you press the button, even if it is already lit when you press the button. If you keep the button depressed for one second or more, the backlight turns off.
- Frequent use of the backlight shortens battery life.

Calibrating a Barometric Pressure Value and Specifying a Measurement Unit

The pressure sensor of this watch is calibrated at the factory before shipment and further adjustment is normally not required. If you notice serious errors in the barometric pressure readings produced by the watch, you can calibrate the sensor to correct the errors.

Important!

Incorrectly calibrating the barometric pressure sensor can result in incorrect readings. Before performing the calibration procedure, compare the readings produced by the watch with those of another reliable and accurate barometer.

To calibrate the barometric pressure value

1. Press (C) to enter the Barometer Mode.
2. After the result of the current measurement appears, hold down (A) until the barometric pressure value starts to flash. This indicates the barometric value setting screen.
3. Use (D) (+) and (B) (-) to change the value in 1hPa/mb (0.05inHg) increments.
 - You can calibrate the barometric pressure value in the range of 600 to 1100hPa/mb (17.70 inHg to 32.45inHg).
 - Pressing (B) and (D) at the same time displays "----", which indicates factory preset calibration.
4. Press (A) to exit the setting screen.



- When you press (A) to exit the setting screen after changing the barometric pressure setting, numbers cycle on the display at high speed for about nine seconds. This does not indicate malfunction. It indicates that the watch is performing internal calibration.

To specify the barometric pressure unit

1. Press (C) to enter the Barometer Mode.
2. After the result of the current measurement appears, hold down (A) until the barometric pressure value starts to flash. This indicates the barometric value setting screen.
3. Press (C) to toggle the measurement unit between hPa/mb and inHg.
4. Press (A) to exit the setting screen.



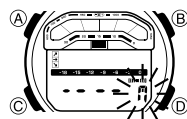
Specifying the Measurement Unit

To specify the altitude unit

Important!

You cannot set the reference altitude value and specify the altitude measurement unit during the same procedure. You must complete one operation (reference altitude value setting, for example), exit the setting screen, and then start the other operation (altitude measurement unit specification, in this example).

1. Press (C) to enter the Altimeter Mode.
2. After the result of the current measurement appears, hold down (A) until the altitude value starts to flash. This indicates the reference altitude value setting screen.
3. Press (C) to toggle the measurement unit between meters (M) and feet (F).
4. Press (A) to exit the setting screen.
 - If you change the altitude measurement unit (M or F) after setting a reference altitude, the Altimeter Mode performs altitude measurements based on factory default settings.



To specify the depth measurement unit

Important!

You cannot change the depth measurement unit when the depth reading is any value other than zero.

1. Press (C) to enter the Depth Gauge Mode.
2. Hold down (A) until the current measurement unit starts to flash. This indicates the measurement unit setting screen.
3. Press (C) to toggle the measurement unit between meters (M) and feet (F).
4. Press (A) to exit the setting screen.

